IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, A. D. 1939

STATES OF WISCONSIN, MINNESOTA, OHIO AND PENNSYLVANIA, COMPLAINANTS, v. STATE OF ILLINOIS AND THE SANITARY DISTRICT OF CHICAGO, DEFENDANTS,	No. 2 Original.
STATES OF MISSOURI, KENTUCKY, TENNESSEE, LOUISIANA, MISSISSIPPI AND ARKANSAS, INTERVENING DEFENDANTS. STATE OF MICHIGAN, COMPLAINANT, v. STATE OF ILLINOIS AND THE SANITARY DISTRICT OF CHICAGO, et al., DEFENDANTS.	No. 3 Original.
STATE OF NEW YORK, COMPLAINANT, v. STATE OF ILLINOIS AND THE SANITARY DISTRICT OF CHICAGO, et al., DEFENDANTS.	No. 4 Original.

To THE HONORABLE,

the Chief Justice and Associate Justices

of the Supreme Court of the United States:

The State of Illinois presents this its petition for a temporary modification of Paragraph 3 of the decree of

this Court, entered on April 21, 1930, in this cause, wherein the diversion of the water from the Great Lakes—St. Lawrence system or water shed after December 31, 1938, was restricted to 1500 cubic feet per second, in addition to domestic pumpage and prays that the limited diversion be temporarily increased to 5,000 cubic feet per second, in addition to domestic pumpage, until December 31, 1942, so as to avert the obnoxious, noisome, unhealthy and dangerous condition now existing in the Illinois Waterway and the Sanitary District Canals, and for causes in support of said petition represents:

That this petition is filed under and pursuant to the provisions of Paragraphs 6 and 7 of the decree entered April 21, 1930, which permits applications, after due notice, for a modification of said decree if conditions should so warrant.

That due notice has been given to the complainants of the filing of this petition.

That the temporary increase now sought will not adversely affect present lake levels as the water levels in the Great Lakes are now in the rising period of one of the fluctuating cycles so that such levels during the temporary period of relief herein asked for will average a foot or more higher than they have averaged over the past eight years.

The State of Illinois has cooperated with The Sanitary District of Chicago in complying with the Court's decree.

In 1933 it passed an act authorizing The Sanitary District of Chicago, in order to provide further funds required for paying the costs of the works made necessary by the decree of this Court, to issue, in addition to all other bonds, an amount not to exceed one hundered millions dollars, without submitting the question of such issuance to a referendum. In 1935 it passed enabling legislation permitting The Sanitary District of Chicago to refund its bond obligations, both defaulted and not yet matured, totaling $139,000,000. This legislation corrected defaults and restored the credit of The Sanitary District. It also passed enabling legislation permitting the sale or transfer to the Federal Government property of The Sanitary District provided proceeds thereof should be used to pay costs of necessary works to comply with decree of United States Supreme Court. It also passed enabling legislation authorizing The Sanitary District to charge for treatment of Industrial Wastes. In 1939 it passed a Pegged Levy Statute permitting The Sanitary District to levy corporate taxes (operating purposes) up to $5,500,000 for years 1940, 1941, 1942 and 1943. (Present maximum corporate rate, 15c on each $100.00 assessed valuation, produces approximately $3,600,000 and the increase was necessary due to added costs of operating the new treatment plants which were constructed to comply with the Supreme Court decree.)

Since the decree of this Court in this cause The Sanitary District has constructed its intercepting sewers along the Chicago River and installed control works at the mouth

of said river so as to prevent reversals in the Chicago River and contamination of the waters of Lake Michigan and has diligently prosecuted its sewage treatment program despite the depression and serious financial difficulties. It has completed all the construction necessary for the collection of more than ninety-nine per cent of all the sewage within the Sanitary District and the treatment to some degree of all the sewage. The facilities for complete sewage treatment have been provided in its North Side Sewage Treatment Works, its Calumet Sewage Treatment Works, and its Southwest Side Sewage Treatment Works and for primary treatment at its West Side Sewage Treatment Works. It has expended on sewage treatment construction in addition to the expenditure of approximately $120,000,000.00 on its dilution system, the following amounts and on the respective dates set forth:

Prior to April 21, 1930 (Date of original decree.)	$ 89,812,847.25
From April 21, 1930, to June 1, 1933, (Date of amended decree May 22, 1933.)	10,973,720.42
From June 1, 1933, to December 1, 1938, (As in final semi-annual report)	59,008,764.03
Total to December 1, 1938	$ 159,795,331.70
The Sanitary District of Chicago has since expended, to December 1, 1939	4,177,748.57
Total to December 1, 1939	$ 164,073,080.27

so that construction work of approximately sixty million dollars was performed by The Sanitary District since January 1, 1934.

As reported to the Court on May 23, 1934, The Sanitary District, acting upon the recommendation of the report of a commission appointed by the Federal Emergency Administration of Public Works to review the plans of the West-Southwest Treatment Project, presented a modification in the construction program procedure originally submitted to and considered by the Court, and said Public Works Administration Commission's report recommended the construction of certain works to provide complete treatment for the Southwest Side area instead of the original plan to supplement the existing West Side Treatment Works for complete treatment in view of the facts that such funds would provide for the immediate purification of the Southwest Side sewage and permit time for further investigation as to the best methods of supplementing the existing West Side Imhoff Tank Plant and provide added protection against pollution of the lake water supply and, in accordance with said report filed with this Court by The Sanitary District, it proceeded with this modification in the construction program.

Plans have been prepared for the construction of secondary or complete sewage treatment facilities at the West Side Works and construction will proceed on the necessary works as quickly as funds are available. It is estimated that the cost of said works will not exceed nine millon dollars and the estimated time required for the physical construction of said complete treatment for the West Side Sewage Treatment Works will be two working seasons.

The debt-incurring capacity of The Sanitary District of Chicago, which is based on the constitutional debt limitation of five per cent of the assessed valuation of property within its territorial limits and the amount of bonds outstanding in recent years and presently, has been as follows:

Date	Debt Incurring Capacity	Based on Assessed Valuation	Bonds Outstanding
Dec. 31, 1932	$ 195,245,880	1931	$ 107,032,000
Dec. 31, 1933	183,183,629	1932	148,970,000
Dec. 31, 1934	138,746,862	1933	143,420,055
Dec. 31, 1935	132,268,808	1934	139,945,890
Jan. 2, 1937	119,915,555	1935	133,322,390
Jan. 2, 1938	115,732,909	1936	124,992,890
Jan. 2, 1939	122,861,672	1937	117,484,390
Nov. 1, 1939	115,430,278	1938	114,484,390
Jan. 2, 1940	115,430,278	1938	111,948,390
			(Estimated)

On December 31, 1933, at the time The Sanitary District had concluded its sale of bonds in the amount of approximately $42,000,000 to the Public Works Administration to finance the construction of the needed works, there was then an unexercised bonding power of approximately $34,000,000; since then The Sanitary District has retired its outstanding bonds in the approximate amount of $32,000,000 and if the assessed valuations had remained the same in 1939 as they were in 1933 the present available additional Sanitary District bonding capacity would be $66,000,000. However, the assessed valuations of property decreased from December 31, 1933, to December 1, 1939, and the debt incurring capacity was reduced approximately

$68,000,000 so that as of December 1, 1939, the outstanding bonds and other legal obligations of The Sanitary District of Chicago are approximately equal to the debt incurring capacity and there is at this date no unexercised bonding capacity.

Assuming as presently anticipated, $2,500,000 of bonds will be redeemed on January 1, 1940, the difference between the debt incurring capacity and the amount of bonds outstanding of The Sanitary District will be $3,445,888 on January 2, 1940, and as contractual obligations of The Sanitary District amount to approximately $2,400,000, including an obligation of $1,400,000 on a contract for the purchase of power from the Public Service Company of Northern Illinois, the unencumbered debt incurring capacity of The Sanitary District of Chicago will then be about $1,000,000 on January 2, 1940.

It is expected additional bonds will be redeemed by The Sanitary District at the rate of about $5,000,000 per year over the next three years and that such a rate of redemption will then enable the selling of bonds for the remaining necessary construction within the next three years, provided the assessed valuation of property within the Sanitary District does not become materially less than it was for 1938, the latest assessment for which figures are available.

Delay in the construction work due to mechanical difficulties has been experienced in placing the Southwest

Treatment Works in complete service through circumstances beyond the control of The Sanitary District, resulting from rejection of bids, readvertising for new bids, construction delays caused by strikes, all of which were duly reported to this Court by The Sanitary District, and a further delay has resulted in the Racine Avenue Pumping Station, which, however, it is expected will be in operation in January, 1940.

By reason of the unavoidable delays in the construction of said treatment works and intercepting sewers and in the installation of complete facilities in the West Side Works, coupled with the drought conditions in the Des Plaines and Illinois Valleys, an obnoxious noisome, filthy, unsanitary and dangerous condition to public health has resulted in the Sanitary District Canal and the Illinois Waterway.

Subsequent to December 31, 1938, when the diversion of lake water was reduced to 1500 cubic feet per second there has been stagnation in the Sanitary District Canal and the Illinois Waterway. This stagnation has resulted in the formation of thick, black, bubbling scum for long distances along the Sanitary District Canal and the Illinois Waterway. Because of the effluent of sewage from the Sanitary District of Chicago into said Sanitary District Canal and the Illinois Waterway a putrescent, obnoxious, noisome and unhealthful odor exists, causing nausea, insomnia, loss of appetite, irritation of the mucous membrane of the nose and throat and in general the undermining of

the health of those persons living or working along the Sanitary District Canal and the Illinois Waterway. This condition aggravates illness and retards the recovery of patients ill in hospitals located along said Sanitary District Canal and the Illinois Waterway.

Innumerable protests against the deplorable condition which has arisen since December 31, 1938, have been filed with the State of Illinois by barge operators and crews thereof and by citizens, Chambers of Commerce and various Civic Association from the cities of Argo, Lemont, Lockport, Joliet, Morris, Marseilles, Ottawa and LaSalle, Illinois, which cities or towns border upon said waterway, and the deplorable conditions in the various parts of said waterway are not only detrimental and dangerous to the health of the citizens along said canal and waterway, but also to those in the service of navigation. There has been an increase of vessel traffic on the Chicago Sanitary and Ship Canal (Chicago Drainage Canal) between Damen Avenue and Lockport, Illinois, from 92,228 tons in 1930 to 2,962,560 tons for the year 1938.

During the early part of 1940, the sewage treatment in operation by the Sanitary District will be on the sewage of a population equivalent of 6,350,000 treated to such a degree that it will be equal to the 100% treatment of the sewage of a population of 4,535,000, and giving a total percentage treatment of approximately 70% which may be compared to the ultimate expected 85% treatment considered by Special Master Hughes in his report on re-reference;

and upon the installation of final complete treatment facilities at the West Side Sewage Treatment Works, The Sanitary District will raise the degree of treatment on the sewage of said West Side area amounting to a population of 1,800,000 from 33 1/3% to 85% which will increase the total sewage treatment of The Sanitary District to that of a population equivalent of 6,439,000 to such a degree that it will equal a total percentage treatment of approximately 85%, which is the degree of treatment anticipated.

A table showing conditions for the treatment of sewage as of June, 1938, and the ultimate treatment expected at various dates by The Sanitary District is as follows:

	Total Population Equivalent	Percentage Treatment	Treatment 100 Per Cent Basis	Sewage and Wastes Remaining Equivalent to Sewage from Population of
As of June 1938				
Treated	3,705,000	62.8	2,328,000	
Not treated	2,770,000	0	0	
Total	6,475,000	35.9	2,328,000	4,147,000
As of December 31, 1938				
Treated	3,888,000	62.8	2,442,000	
Not treated	2,606,000	0	0	
Total	6,494,000	37.7	2,442,000	4,052,000
As of November 1, 1939				
Treated	4,919,000	67.4	3,318,000	
Not treated	1,575,000	0	0	
Total	6,595,000	50.9	3,318,000	3,176,000

As of January 1940....				
Treated.....	6,350,000	71.5	4,535,000	
Not treated.....	144,000	0	0	
Total.....	6,494,000	70.4	4,535,000	1,959,000
As of May 1940, with plants operated as designed,				
Treated.....	6,439,000	71.5	4,565,000	
Not treated.....	55,000	0	0	
Total.....	6,494,000	70.4	4,565,000	1,929,000
As of May 1940, with one-third of West Side sewage diverted to Southwest Works,				
Treated.....	6,439,000	75.8	4,876,000	
Not treated.....	55,000	0	0	
Total.....	6,494,000	75.1	4,876,000	1,618,000
After Complete Treatment at West Side Works,				
Treated.....	6,439,000	85.4	5,500,000	
Not treated.....	55,000	0	0	
Total.....	6,494,000	84.7	5,500,000	994,000
Ultimate Treatment				
Total.....	6,494,000	85	5,520,000	974,000

The sewage and wastes remaining equivalent to the sewage from the various populations and the fresh water available for the dilution and the ultimate natural purification of such remaining wastes has been and will be as follows, with the diversion of the water from the Great Lakes-St. Lawrence system or water shed of 5000 cubic feet per second annual average prior to December 31, 1938, and re-

duction to this diversion to 1500 cubic feet per second thereafter:

	Diluting Water C. F. S. Annual Average	Sewage and Wastes Remaining Equivalent to Sewage from Population of	Diluting Water Per 1000 Persons C. F. S. Annual Average
June to December 1938.....	5,000	4,147,000	1.21
January to August 1939.....	1,500	4,052,000	0.37
November 1939 to January 1940.....	1,500	3,176,000	0.47
January 1940 to May 1940...	1,500	1,959,000	0.76
May 1940 until complete treatment at West Side Works...	1,500	1,618,000	0.93
After Complete Treatment at West Side.....	1,500	994,000	1.51
Ultimate.....	1,500	974,000	1.54

The dilution ratio in effect during 1938, viz: 1.21 cubic feet per second of fresh water per 1000 persons was not sufficient to prevent nuisance and the dilution ratio in effect during 1939, viz: 0.37 cubic feet per second of fresh water per 1000 persons prior to August and 0.47 cubic feet per second after October, was so inadequate as to cause a serious nuisance. The dilution ratio to be in effect from the spring of 1940 until the completion of the final sewage facilities to the West Side Sewage Treatment Works of The Sanitary District will be limited to 0.93 cubic feet per sec-

ond of fresh water per 1000 persons which will be inadequate to prevent the continuation of the nuisances as during the major portion of the time and particularly, during dry weather when diluting water will be most needed. The dilution ratio will then be about two-thirds of the annual average ratio, because about 500 cubic feet per second or one-third of the diluting water will be used in storm runoff. The effect of the operation of the completed program will be to leave available for the dilution of sewage treatment plant effluent, equivalent to the raw sewage of 974,000 people, fresh water in the amount of 1,500 cubic feet per second, annual average, or 1,000 cubic feet per second during times of dry weather. This will give an average of 1.5 cubic feet per second of diluting water per 1000 persons or slightly better than the 1.2 cubic feet per second average available during 1938. It of course must be realized that only actual experience can show whether or not this will be sufficient to eliminate the nuisance.

The reduction in diversion from 5,000 cubic feet per second in 1938 to 1,500 cubic feet per second in 1939 resulted in a very great deterioration in the sanitary condition of the South Branch of the Chicago River, the Main Channel of the Sanitary District, the lower Des Plaines River, and the upper Illinois River, as measured by the content of dissolved oxygen in the water and by the biochemical oxygen demand of the water. It is commonly recognized that the absence of dissolved oxygen is peculiarly significant of

deterioration, as it indicates a condition of nuisance and the fact that fish life must be absent.

The diluting water diverted from Lake Michigan starts down the South Branch of the Chicago River with approximately 8.5 parts per million of dissolved oxygen in summer and 12 parts per million in winter and its biochemical oxygen demand is almost zero and as the flow receives sewage or sewage effluent, the dissolved oxygen content is decreased by the biochemical oxygen demand, considerably faster in summer than in winter. In 1939 in the South Branch of the Chicago River, at Damen Avenue, the dissolved oxygen ranged from zero to 2 parts per million as against 5.1 to 9.4 in 1938, from April to September and the minimum day in the like period in 1939 was less than 0.4 parts per million, whereas in 1938 it was never lower than 4.2. In July, August and September, 1939, most of the water samples contained no dissolved oxygen but, on the other hand, the concentration of pollution markedly increased in May, from a biochemical oxygen demand of 10.7 parts per million in 1938 to 55.1 parts per million in 1939, with a single day showing in May, 1939, of 156 parts per million.

In 1939 at Summit, Illinois, the monthly average content of dissolved oxygen was markedly lower than in 1938. From April to September of 1939, except for 0.2 parts per million in June, no dissolved oxygen was found at Summit, whereas in 1939 the minimum month was 0.6 parts per million and the maximum 6.6 parts per million in the same period. The concentration of pollution was markedly in-

creased in 1939, with a very great rise in May, the monthly average of 18.0 parts per million biochemical oxygen demand in 1938 having risen to 66.9 parts per million in 1939, with a maximum day of 102 parts per million. In January, 1938, at Lockport, Illinois, the dissolved oxygen averaged 7.4 parts per million, with a discharge of 6,408 cubic feet per second; whereas, in January, 1939, the average dissolved oxygen content dropped to 0.5 parts per million with a discharge of 2,911 cubic feet per second. Prior to 1939, the content of dissolved oxygen had always been high in the winter. In June, 1938, at Lockport the biochemical oxygen demand averaged 18.8 parts per million with a discharge of 6,701 cubic feet per second and in June, 1939, the average increased to 37.8 with a discharge of 4,227, and in May, 1939, was even higher, averaging 42.3 parts per million. In 1939, at Lockport, not only was the dissolved oxygen lowered markedly in the winter, but from May to October it was found to be zero, whereas in 1938 from 0.1 to 0.5 parts per million was present. The concentration of pollution increased markedly in every month of 1939 as compared with 1938, the biochemical oxygen demand ranging from 23 to 42.3 parts per million in 1939 as against 13.4 to 22.6 parts per million in 1938. Above the Marseilles dam, the river shows the effect of the dilution coming from the Kankakee River. In 1939 the average monthly dissolved oxygen was generally lower than in 1938, and reached zero on minimum days in May and June, as against minimums in those months of 1938 of 6.1 and 4.5 parts per million.

In the belief that the Secretary of War, acting upon the recommendation of the Chief of Engineers, had authority to abate the existing nuisance on the now Federal Waterway Project by authorizing the diversion of more water, a plea for relief was addressed to the Secretary of War on June 5, 1939, by the Mayor of the City of Joliet, Illinois. The Secretary of War, on September 1, 1939, replied, advising that the report of the United States District Engineer at Chicago, Illinois, stated conditions in the Brandon Road Pool, which extends throughout the City of Joliet, were unsightly, filthy and noisome and much worse than they were last year; that unquestionably the waterway was contaminated by sewage from the Chicago area to a greater extent than contemplated and that remedial action was necessary; that a temporary increase in diversion to 5,000 cubic feet per second was necessary in the interest of public health and to remedy the unsightly and odorous conditions existing in Joliet. The Secretary of War further stated that, while he was entirely sympathetic with the view of the citizens of the city, he was of the opinion that the War Department was without legal authority to permit any increase in the flow of water from Lake Michigan through the Chicago Drainage Canal and its auxiliary channels or otherwise, and that the withdrawal of lake water was now governed by the decree of the Supreme Court of the United States entered April 21, 1930, and he suggested that it might be appropriate for the State or Sanitary District authorities to apply to the Supreme Court for such modifi-

cation of the above decree with regard to the diversion of water from Lake Michigan as was necessary under present conditions; that such an application presented a method by which the present unsatisfactory conditions at Joliet might be relieved.

On October 27, 1939, Major General Julian L. Schley, Chief of Engineers of the United States Army, writing on the same subject-matter, substantially reiterated the findings of the Secretary of War.

WHEREFORE, the State of Illinois respectfully petitions that paragraph 3 of the decree of this Court of April 21, 1930, in this cause, be temporarily modified to permit an annual average diversion of not more than 5000 cubic feet per second of water from the Great Lakes-St. Lawrence System or Water Shed, in addition to domestic pumpage, until December 31, 1942, at which time it is expected complete treatment of the sewage of the Sanitary District as heretofore submitted to the Court will have been provided, so as to eliminate the obnoxious, noisome and unhealthy conditions now existing in Illinois Waterway, or if this Court should determine that the Secretary of War, under existing law, has authority to grant a temporary increase in this diversion if conditions so warrant, that this Court accordingly issue such a pronouncement, as the Secretary of War, in his letter of September 1, 1939, addressed to the Mayor of the City of Joliet and referred to herein, has assumed the position that under the provisions of said decree

of April 21, 1930, the War Department is without legal authority, regardless of conditions, to permit any increase whatsoever in the said diversion.

Respectfully submitted,

STATE OF ILLINOIS,

By ..... Attorney General of the State of Illinois.

STATE OF ILLINOIS }
COOK COUNTY } ss.

WILLIAM C. CLAUSEN, being first duly sworn, on oath deposes and says: That he is a duly appointed and acting Assistant Attorney General of the State of Illinois; that he has read the foregoing petition and that the matters and things therein set forth are true in substance and in fact.

..... William C. Clausen

Subscribed and sworn to before me this 8th day of January A. D. 1940.

..... Notary Public.